Material Safety Data Sheet

OSHA / ANSI 2003 Compliant

NFPA Rating: Health: 2   Flammability: 1   Instability: 0
HMIS Rating: Health: 2*   Flammability: 1   Physical Hazard: 0   Personal Protection: X

* Indicates possible chronic health effects

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Chimassorb 944 FD
Product Number: 1057111
Intended Use: Light Stabilizer
Manufacturer/Supplier: Ciba Specialty Chemicals Corporation
540 White Plains Road
Tarrytown, NY 10591
8:30am - 5pm Phone Number: 1-914-785-2000
MSDS Request Line (voicemail): 1-800-431-2360
Customer Service/Product Information 1-800-474-4731

Emergency 24-Hour Health/Environmental Phone: 1-800-873-1138

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Signal Word: CAUTION!
Physical Form: Solid
Color: Colorless to Light yellow
Odor: None
Health: May cause irritation to skin. May cause respiratory irritation. Repeated exposure orally, and potentially by inhalation, may cause effects on the liver, lymph nodes, spleen and blood based on animal studies. These effects can be seen as inflammation of the lymph nodes, jaundice of the liver, and blood cell changes such as anemia.

Physical Hazards: Refer to MSDS Section 7 for Dust Explosion information.
Environmental: This product is toxic to aquatic organisms. Prevent spillage or leakage to a body of water.
OSHA Hazardous Substance: This material is classified as hazardous under OSHA regulations.

Primary Route(s) of Entry: Ingestion, Skin, Inhalation, Eyes.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly[[6-[1,1,3,3-tetramethylbutyl)amino]-s-triazine-2,4-diyl][2,2,6,6-tetramethyl-4-piperidyl]imino] hexamethylene[(2,2,6,6-tetramethyl-4-piperidyl)imino]</td>
<td>70624-18-9</td>
<td>97 - 100</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**Eyes:** In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin:** Wash off immediately with soap and plenty of water. Get medical attention if irritation occurs.

**Inhalation:** Remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention.

**Ingestion:** Do not induce vomiting. If vomiting occurs naturally, have casualty lean forward to reduce the risk of aspiration. Seek medical attention immediately.

**Notes to physician:** Pre-existing allergies or eczema; liver disease and jaundice; or blood disorders.

### 5. FIRE FIGHTING MEASURES

**Fire Fighting Measures:** Standard procedure for chemical fires.

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, foam or water mist.

**Fire Fighting Equipment:** Wear self-contained breathing apparatus and protective suit.

**Unusual hazards:** The product can form an explosive dust/air mixture. For further information, see Section 7 Explosion Hazards.

**Hazardous Combustion Products:** Burning may produce toxic combustion products.

### 6. ACCIDENTAL RELEASE MEASURES

**Cleanup Instructions:** Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Wear suitable protective equipment. Should not be released into the environment.

### 7. HANDLING AND STORAGE

**Handling:** As with all industrial chemicals, use good industrial practices when handling. Avoid eye, skin, and clothing contact. Do not inhale. Do not taste or swallow. Use only with adequate ventilation.

**Storage:** Keep containers tightly closed in a cool, well-ventilated place.
Explosion Hazards:
- Combustible powder.
- Avoid creating dusty conditions.
- Grounding is required when emptying into a conductive container.
- When flammable solvents are present, the container must be inerted or the system otherwise designed to prevent or contain an explosion. Seek expert advice.

In addition, for products packaged in fused-lined (coated) fiber drums, fiber drums with conductive liners, steel drums, steel pails, and Type "C" FIBC (bulk bags), or other conductive the following instructions also apply:

- Always ground this package before emptying.

The user is responsible for designing the system to handle solid and ensuring proper training of employees in the system's use.

For Industrial Use Only

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines:

There are no OSHA or ACGIH exposure guidelines available for component(s) in this product.

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA PEL</th>
<th>OSHA STEL</th>
<th>ACGIH TWA</th>
<th>ACGIH STEL</th>
<th>Ciba/Manufacturer IEL:</th>
</tr>
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<tbody>
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<td>Poly[[6-[1,1,3,3-tetramethylbutyl)amino]-s-triazine-2,4-diy][2,2,6,6-tetramethyl-4-piperidyl]imino] hexamethylene[2,2,6,6-tetrametyl-4- piperidyl]imino] 70624-18-9</td>
<td>0.5 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td>0.5 mg/m³ air (8 hour TWA)</td>
</tr>
</tbody>
</table>

Ciba IEL for Product: 0.5 mg/m³ air (8 hour TWA)

Personal Protective Equipment

**Eye/Face Protection:**
Wear safety glasses or goggles to protect against dust particles.

**Skin Protection:**
Wear chemical resistant gloves and protective clothing.

**Respiratory Protection:**
Use NIOSH approved respirator as needed to mitigate exposure.

**Engineering Controls:**
Work in well ventilated areas. Do not breathe dust.

**Other Protective Equipment:**
Eye wash station and safety shower should be available in immediate work area. Select additional protective equipment based upon potential for exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical Form:** Solid
**Color:** Colorless to Light yellow
**Odor:** None.
**Boiling Point:** Not applicable
**Freezing/Melting Point:** Not determined
**Solubility in water:** Not determined
**10. STABILITY AND REACTIVITY**

**Stability:** Stable.

**Conditions to Avoid:** Avoid static discharge.

**Incompatibility:** Strong oxidizing agents, strong acids, strong bases.

**Hazardous Decomposition Products:** No decomposition expected under normal storage conditions.

**Possibility of Hazardous Reactions:** None expected.

**11. TOXICOLOGICAL INFORMATION**

**Acute Oral Toxicity:** > LD50 5000 mg/kg (Rats) LD50 1580 mg/kg (Chinese hamster)

**Acute Dermal Toxicity:** > LD50 3000 mg/kg (Rats)

**Acute Inhalation Toxicity:** (Rats) A 4-hour exposure to the decomposition products produced by heating the product to 300°C elicited no mortalities with only transient symptoms noted. (Rats) Various 1-4 hour exposures to dust/aerosol concentrations using whole body or snout-only procedures have been conducted. These results indicate that respiratory irritation can occur in the range of 0.2-0.6 mg/L. Mortalities have occurred above 2 mg/L. About 50% of the particles are below 7 microns in size.

**Eye Irritation:** (Rabbits) Irritant

**Skin Irritation:** (Rabbits) Not an irritant.

**Skin Sensitization:** (Guinea Pigs) No sensitization observed in the maximization test.

**Carcinogenicity (IARC; NTP; OSHA; ACGIH):** None of the components in this product at concentrations greater than 0.1% are listed by IARC; NTP, OSHA or ACGIH as a carcinogen.
Carcinogenicity Studies: In a 24-month study, the test substance was fed to rats in the diet at dose levels of 5, 30 and 200 mg/kg. No evidence of carcinogenicity was obtained. Doses of 30 and 200 mg/kg revealed widespread inflammatory reaction of chronic and recurrent nature. This involved the reticuloendothelial system, primarily the mesenteric lymph nodes. The hematological profile indicated leucocytosis with neutrophilia. The high dose animals also exhibited thrombocytosis and slight anemia. The 200 mg/kg dose group also caused increased mortality in both sexes. The no observable effect level (NOEL) was determined to be 5 mg/kg.

Mutagenicity: Ames Test: Non-mutagenic. 
Nucleus anomaly test (Chinese hamster): Non-mutagenic. 
Sister chromatid exchange studies on somatic cells: Non-mutagenic.

Reproductive Toxicity: In a 2-generation reproduction study, rats were administered 400, 2000 and 4000 ppm in diet. No treatment-related effects were observed in the offspring at any dose level. However, toxic effects were observed at the 2000 and 4000 ppm dose levels in the parents of both generations, suggestive of an immuno-response (effects included reddened and/or swollen ears and/or extremities, enlarged lymph nodes, and/or findings in the kidneys, spleen and/or liver). The no observable effect level (NOEL) for effects on the offspring was 4000 ppm; the NOEL for maternal and paternal toxicity was 400 ppm.

Teratogenicity: In a teratology study, pregnant rats were administered the product by gavage, from day 6 until day 15 of pregnancy, inclusive, at dosage of 0, 200, 600, and 1200 mg/kg. The dams of the higher dosage groups showed a dose-related reduction in body weight gain and food consumption. The progeny of the high-dose group displayed a delay of skeletal maturation, with calcanei and 5th sternebrae being affected. No other significant effects were seen.

Neurotoxicity: Not determined

Subacute Toxicity: Not determined

Subchronic Toxicity: Feeding studies were conducted using the rat or dog for periods up to 6 months at dietary levels up to 10,000 ppm. Toxicity primarily involving the liver and mesenteric lymph node were evident in both species at the higher dosages. Spleen and blood changes were also seen. The rat NOEL was in the 5-7 mg/kg/day range (100 ppm) with the dog NOEL being 19 mg/kg/day (600 ppm).

Chronic toxicity: Not determined

Absorption / Distribution / Excretion / Metabolism: Male rats were orally administered a single dose of either 15 or 200 mg/kg of radiolabelled test material. Blood/plasma levels showed non-linearity at these doses and had a long elimination half-life. Distribution was primarily to spleen, liver and gastrointestinal tract. Polar metabolites were formed. Excretion was almost exclusively via the feces with about 70% and 100% of the radioactivity recovered by 24 and 168 hours, respectively.

Additional Information: Not determined

12. ECOLOGICAL INFORMATION

Toxicity to Fish: LC50: > 72 mg/L 96-hour, (Rainbow trout); > 9 mg/l 96-hour, (Carp)
Toxicity to Invertebrates:  
EC50: > 100 mg/L 24 hour (Daphnia magna)  
22 mg/L 48 hour (Daphnia magna)

Toxicity to Algae:  
EC50: 100 ppm 72 hour (Green algae)

Toxicity to Sewage Bacteria:  
Not determined

Activated Sludge Respiration Inhibition Test:  
Not determined

Biochemical Oxygen Demand (BOD):  
Not determined

Chemical Oxygen Demand (COD): Not determined

Total Oxygen Demand (TOD):  
Not determined

Biodegradability:  
Not biodegradable in the modified Sturm test (0 - 1% in 28 days)

Bioaccumulation:  
Japanese (MITI) bioaccumulation study: (Carp) Not bioaccumulative at test concentrations of 45 and 4.5 ppb (using 14-C material).

Additional Environmental Data:  
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Disposal:  
Dispose in accordance with local, state, provincial and federal regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):  
Not regulated for this mode of transport.

International Maritime Dangerous Goods (IMDG):  
Not regulated for this mode of transport.

International Air Transportation Authority (IATA):  
Not regulated for this mode of transport.

15. REGULATORY INFORMATION

Federal Regulations

OSHA Hazardous Substance:  
This material is classified as hazardous under OSHA regulations
Clean Air Act - Hazardous Air Pollutants (HAP): This product does not contain any Hazardous Air Pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

Clean Air Act - Ozone Depleting Substances (ODS): This product neither contains, nor was manufactured with, a Class I or Class II ozone depleting substance (ODS), as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A+B).


SARA Section 302 Extremely Hazardous Substances (EHS): This product does not contain any components regulated under Section 302 (40 CFR 355) as Extremely Hazardous Substances.

SARA Section 304 CERCLA Hazardous Substances: This product does not contain any components regulated under Section 304 (40 CFR 302) as hazardous chemicals for emergency release notification ("CERCLA" List).

SARA Section 311/312 Hazard Communication Standard (HCS): This product is regulated under Section 311/312 HCS (40 CFR 370), Acute (immediate) health hazard, Chronic (delayed) health hazard.

SARA Section 313 Toxic Chemical List (TCL): This product does not contain any component(s) listed on the Section 313 Toxic Chemical List.

TSCA Section 8(b) Inventory Status: All component(s) comprising this product are either exempt or listed on the TSCA inventory.

TSCA Section 5(e) Consent Orders: This product is not subject to a Section 5(e) Consent Order.

TSCA Significant New Use Rule (SNUR): This product is not subject to a Significant New Use Rule (SNUR).

TSCA Section 5(f): This product is not subject to a Section 5(f)/6(a) rule.

TSCA Section 12(b) Export Notification: This product contains the following component(s) that are subject to a Section 12(b) Export Notification: 0.01 to 0.09% Mixed Xylenes; CASRN 1330-20-7

State Regulations

California Proposition 65: This product contains a component(s) currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-To-Know: This product contains the following component(s) which are subject to Pennsylvania Right-to-Know disclosure requirement. 0-0.3% Benezene, dimethyl- (CASRN:1330-20-7), 0-0.09% Ethylbenzene (CASRN:100-41-4).

International Regulations

Chemical Weapons Convention (CWC): This product does not contain any component(s) listed under the Chemical Weapons Convention Schedule of Chemicals.

Domestic Substance List (DSL) Status: All components either exempt or listed on the DSL.
16. OTHER INFORMATION

Disclaimer: The information contained herein is based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to such data or information. The user is responsible for determining whether the product is suitable for its intended conditions of use.